FORM PTO-1083

PATENT

Case Docket No.   H-1131

In RE application of   **K. SHIMADA et al.**

Serial No.:   **10/780,772**

Group Art Unit:   **2188**

Filed:   **February 19, 2004**

Examiner:   **M. PADMANABHAN**

For:   **STORAGE HAVING LOGICAL PARTITIONING CAPABILITY AND SYSTEMS WHICH INCLUDE THE STORAGE**

Assistant Commissioner for Patents
Washington, D.C.   20231

Sir:

Transmitted herewith is an Amendment in the above-identfied application.

☐   Small entity status of this application under 37 CFR 1.9 and 1.27 has been established by a verified statement previously submitted.

☐   A verified statement to establish small entity status under 37 CFR 1.9 and 1.27 is enclosed.

☒   No additional fee is required.

The fee has been calculated as shown below:

|  | (COL. 1)  Claims Remaining After Amendment |  | (COL. 2)  Highest No. Previously Paid For | (COL. 3)  Present Extra | SMALL ENTITY  Rate | Additional Fee | OR | OTHER THAN A SMALL ENTITY  Rate | Additional Fee |
|---|---|---|---|---|---|---|---|---|---|
| Total | • 18 | Minus | •• 20 | = 0 | x 9 | $ | | x 18 | $ 0 |
| Indep. | • 3 | Minus | ••• 3 | = 0 | x 42 | $ | | x 84 | $ 0 |
| ☐ First Presentation of Multiple Dependent Claims | | | | | + 140 | $ | | + 280 | $ 0 |
| | | | | | Total | $ | OR | Total | $ 0 |

•     If the entry in Col. 1 is less than the entry in Col. 2, write '0' in Col. 3.
••    If the 'Highest Number Previously Paid For' IN THIS SPACE is less than 20, write '20' in this space.
•••   If the 'Highest Number Previously Paid For' IN THIS SPACE is less than 3, write '3' in this space.
      The 'Highest Number Previously Paid For' (Total or Independent) is the highest number found from the equivalent box in
      Col. 1 of a prior Amendment or the number of claims originally filed.

☐   Please charge my Deposit Account No. 50-1417 in the amount of $_____.

☐   A check in the amount of $_____ is attached in payment of:
   _____.

☒   The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 50-1417.

   ☒   Any filing fees under 37 CFR 1.16 for the presentation of extra claims.

   ☒   Any patent application processing fees under 37 CFR 1.17.

   ☒   Any Extension of Time fees that are necessary, which are hereby requested if necessary.

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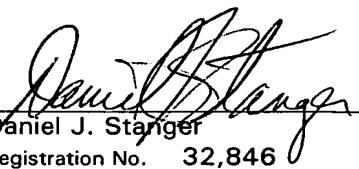
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Date:   June 20, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

    K. SHIMADA, et al.

Serial No. 10/780,772            Group Art Unit: 2188

Filed: February 19, 2004        Examiner: M. PADMANABHAN

For: STORAGE HAVING LOGICAL PARTITIONING CAPABILITY AND
      SYSTEMS WHICH INCLUDE THE STORAGE

## RESUBMITTED PETITION TO MAKE SPECIAL
## UNDER 37 CFR §1.102(d) (MPEP §708.02(VIII))

**Mail Stop: Petition**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450           June 20, 2005

Sir:

In response to the Decision on Petition to Make Special mailed April 18, 2005, dismissing the Petition to Make Special filed November 30, 2004, the Applicants re-petition.

This Resubmitted Petition incorporates by reference the November 30, 2004 Petition and provides additional details regarding independent claims 1, 16, and 18 and how the claimed subject matter is patentable over the documents developed by the pre-examination search.

The Applicants have prepared this Resubmitted Petition in order to satisfy the requirements of 37 CFR 1.102(d) and MPEP §708.02 (VIII), and to address the deficiencies alleged in the

Decision noted above (namely, the lack of a sufficiently detailed discussion of the documents developed by the pre-examination search, including a detailed discussion of how the invention defined in independent claims 1, 16, and 18 is distinguishable from the documents). Specifically, the Decision states that many of the references (specifically, Shimura, US 5,210,844) are described as failing to disclose features that are not set forth in claims 1 and 18. Thus, the Applicants below refer to specific language of all of the independent claims 1, 16, and 18 in accordance with the requirement, while attempting to avoid a wholesale restatement of the claims. Nevertheless, to achieve the required specificity, and due to the relative lack of correspondence between the claimed structure/functions and the listed disclosures, substantial restatement of the claims could not be entirely avoided.

**(A)  The fee set forth in 37  CFR §1.17(h) was previously submitted.**

A Credit Card Payment Form in the amount of $130.00 was submitted with the Petition filed November 30, 2004, in satisfaction of the fee set forth in 37 CFR §1.17(h). It is believed that this Resubmitted Petition does not require an additional fee. However, the Commissioner is hereby

authorized to charge any additional payment due, or to credit

any overpayment, to Deposit Account No. 50-1417.

## (B) All claims are directed to a single invention

If the Office determines that all claims are not directed

to a single invention, Applicants will make an election

without traverse as a prerequisite to the grant of special

status in conformity with established telephone restriction

practice.

## (C) A pre-examination search has been conducted.

The search was directed towards a storage system.  In

particular, the search was directed towards a storage to be

connected to a network as set forth in independent claim 1,

comprising a plurality of interfaces, a plurality of disk

drives, and a control unit which translates a file access into

a block access and controls the plurality of disk drives on

the basis of the block access.  The control unit logically

partitions the plurality of interfaces, the plurality of disk

drives, and the control unit, and causes the partitioned

plurality of interfaces, the partitioned plurality of disk

drives, and the partitioned control unit to operate as a

plurality of virtual storages independently.

The search was also directed particularly to a storage
system as set forth in independent claim 16, including a
storage comprising a plurality of interfaces, a plurality of
disk drives, a control unit which translates a file access
into a block access and controls the plurality of disk drives
on the basis of the block access, and a supervising terminal
connected to the storage, wherein the storage logically
partitions the plurality of interfaces, the plurality of disk
drives, and the control unit on the basis of inforemation to
be inputted to the supervising terminal and operates as plural
virtual storages independently.

The search was further directed to a storage as set forth
in independent claim 18, comprising a plurality of interfaces,
a plurality of disk drives, and a control unit which
translates a file access into a block access and controls the
plurality of disk drives on the basis of the block access,
wherein the control unit includes a plurality of cache
memories, first and second processors, a plurality of
memories, and a plurality of communication units.  The control
unit logically partitions the plurality of cache memories, the
first and second processors, the plurality of interfaces, the
plurality of disk drives, the plurality of memories, the
plurality of communication units, and the control unit, and

causes the partitioned devices to operate as a plurality of

virtual storages independently.

The search of the above features was conducted in the

following areas:

| Class | Subclasses |
|-------|------------|
| Class 711 | 147 |
| | 153 |
| | 173 |
| | 202 |
| Class 718 | 1 |

Additionally, a computer database search was conducted

using the U.S. Patent and Trademark Office's Examiner

Application Search Tool (EAST).

(D)   The following is a list of the references deemed most
closely related to the subject matter encompassed by the
claims:

| U.S. Patent Number | Inventor(s) |
|---|---|
| 5,210,844 | Shimura et al. |
| 5,592,638 | Onodera |
| 5,659,786 | George et al. |
| 5,704,055 | George et al. |
| 5,790,852 | Salm |
| 6,484,245 | Sanada |
| 6,606,690 | Padovano |
| 6,640,278 | Nolan et al. |
| 6,725,352 | Goodman et al. |
| 6,738,854 | Hoese et al. |
| 6,742,090 | Sanada et al. |
| 6,754,776 | Conway et al. |
| 6,763,419 | Hoese et al. |

| U.S. Patent Application Publication No. | Inventor(s) |
|---|---|
| 2002/0007366 | Fontijn |
| 2002/0133539 | Monday |
| 2003/0065898 | Flamma et al. |
| 2003/0120751 | Husain et al. |
| 2004/0111580 | Weber et al. |

Additionally, the following documents were made of record

in the present application by the IDS filed February 19, 2004.

| U.S. Patent Application Publication No. | Inventor(s) |
|---|---|
| 2003/0097393 | Kawamoto et al. |

| Japan Patent Application Publication No. | Inventor(s) |
|---|---|
| 2003-157177 | Kawamoto et al. |

Because all of the above-listed documents have been made
of record in the present application by the Information
Disclosure Statements filed February 19, 2004 and November 24,
2004, additional copies of the documents have not been
submitted with this Petition in accordance with MPEP §
708.02(VIII)(d).

**(E)   It is submitted that the present invention is patentable
over the references for the following reasons.**

It is submitted that the cited references, whether taken
individually or in combination with each other, fail to teach
or suggest the invention as claimed.  In particular, the cited
references, at a minimum, fail to teach or suggest in
combination with the other limitations recited in the claims:

a first feature of the present invention as claimed in
independent claim 1, wherein the control unit logically
partitions the plurality of interfaces, the plurality of disk
drives, and the control unit, and causes the partitioned
plurality of interfaces, the partitioned plurality of disk
drives, and the partitioned control unit to operate as a
plurality of virtual storages independently;

a second feature of the present invention as claimed in
independent claim 16, wherein the storage logically partitions

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the plurality of interfaces, the plurality of disk drives, and

the control unit on the basis of inforemation to be inputted

to the supervising terminal and operates as plural virtual

storages independently; and

a third feature of the present invention as claimed in

independent claim 18, wherein the control unit logically

partitions the plurality of cache memories, the first

processor, the second processor, the plurality of interfaces,

the plurality of disk drives, the plurality of memories, the

plurality of communication units and the control unit, and

causes the partitioned devices to operate as a plurality of

virtual storages independently.

To the extent applicable to the present Petition, the

Applicants submit that although the distinguishing features

may represent a substantial portion of the claimed invention,

the claimed invention including these features and their

interoperation provides a novel storage system not taught or

suggested by any of the references of record.

The references considered most closely related to the

claimed invention are briefly discussed below:

**Shimura, et al., US 5,210,844** (Shimura) discloses an

information processing apparatus that has at least one

processor and a main storage, accessed by the processor, and

capable of providing a plurality of logical information processing apparatuses by logically partitioning the information processing apparatus. The information processing apparatus includes a main storage partitioned into a plurality of memory areas, with each of the memory areas corresponding to one of the plurality of logical information processing apparatuses. The information processing apparatus further includes a first storage unit for storing identification information for each of the memory areas identifying the logical information processing apparatus allocated to each memory, and a read unit for reading the identification information from the first storage unit when the main storage is to be accessed by one of the plurality of logical information processing apparatuses. (See, e.g., Column 3, line 27 - Column 4, line 40.)

However, Shimura fails to teach the present invention, including the logical partitioning of a plurality of interfaces, a plurality of disk drives, and a control unit to permit operation as a plurality of virtual storages independently.

More particularly, Shimura does not teach or suggest the above-described first feature of the present invention as recited in independent claim 1, the above-described second

feature of the present invention as recited in independent claim 16, or the above-described third feature of the present invention as recited in independent claim 18, in combination with the other limitations recited in each of the independent claims.

**Onodera, US 5,592,638** (Onodera) discloses a data processor having a storage and a processor, and a method of assigning a plurality of regions of the storage to a plurality of virtual machines according to a plurality of activating or non-activating storage region assignment requests. A virtual machine control program (VMCP) 110 is operated on a real data processor 10. Under control of the VMCP 110, a plurality of virtual machines or logical partitions are generated and the respective logical partitions are assigned to the storage regions of a real storage 20. In particular, the logical partition whose storage origin is not designated is activated, the VMCP 110 reads a storage assignment status table 310 of the file memory 30, generates a storage assignment work table 410 and the remainder storage region area table 420 on a work memory 40, and determines whether or not assignment of the storage region of the associated logical partition is possible. (See, e.g., Column 4, lines 58-67.)

Onodera, however, does not teach the claimed invention, including the logical partitioning of a plurality of interfaces, a plurality of disk drives, and a control unit to permit operation as a plurality of virtual storages independently.

More particularly, Onodera does not teach or suggest the above-described first feature of the present invention as recited in independent claim 1, the above-described second feature of the present invention as recited in independent claim 16, or the above-described third feature of the present invention as recited in independent claim 18, in combination with the other limitations recited in each of the independent claims.

**George, et al., US 5,659,786** (George '786) discloses dynamic reconfiguration of system resources in a logically partitioned system without the need for operator involvement to free up resources. In operation, when started by an external stimulus, such as an operator command or a time-driven event, a hardware policy or PR/SM operator requests a physical configuration change. The processor controller element passes the request to LPAR, which translates the request into a request (or requests) to a logical partition (or partitions) to free up logical resources. LPAR sends the

translated requests to operating systems in the logical

partition(s), which respond as they would to an operator

request by performing logical deconfiguration, and then

physical deconfiguration via a signal to LPAR.  LPAR, which

may initiate deconfiguration requests to different partitions

in parallel, evaluates the actions by each partition and, if

necessary, consults a policy to make needed adjustments to

insure that all needed resources are obtained.  Finally, LPAR

sends the appropriate physical reconfiguration request(s) to

the processor controller element for execution.  (See, e.g.,

Column 2, lines 37-55.)

However, George '786 does not teach the present

invention, including the logical partitioning of a plurality

of interfaces, a plurality of disk drives, and a control unit

to permit operation as a plurality of virtual storages

independently.

More particularly, George '786 does not teach or suggest

the above-described first feature of the present invention as

recited in independent claim 1, the above-described second

feature of the present invention as recited in independent

claim 16, or the above-described third feature of the present

invention as recited in independent claim 18, in combination

with the other limitations recited in each of the independent claims.

**George, et al., US 5,704,055** (George '055) discloses a data processing system that has a processing unit and a memory which provides a common pool of physical storage. This storage is initially assigned as either main storage or expanded storage during power-on. Subsequent to the initial assignment, storage assigned as main storage or expanded storage may be unassigned and thus returned to the common pool. Once returned to the common pool, the storage may be reassigned as either main storage or expanded storage. The storage reassignment is done dynamically without requiring a reset action and transparent to the operating system and any active application programs. (See, e.g., Abstract, and Column 5, lines 26-38.)

However, George '055 does not disclose the claimed invention, including the logical partitioning of a plurality of interfaces, a plurality of disk drives, and a control unit to permit operation as a plurality of virtual storages independently.

More particularly, George '055 does not teach or suggest the above-described first feature of the present invention as recited in independent claim 1, the above-described second

feature of the present invention as recited in independent

claim 16, or the above-described third feature of the present

invention as recited in independent claim 18, in combination

with the other limitations recited in each of the independent

claims.

**Salm, US 5,790,852** (Salm) discloses a computer system

comprising a virtual storage, and means for organizing the

virtual storage to provide storage space for parallel program

execution in pre-allocated partitions.  The virtual storage

contains shared areas and private areas in a plurality of

address spaces.  Depending on the job to be performed, the

organizing means allocates one or more dynamic partitions in

the private areas in addition to the pre-allocated partitions,

and the dynamic partitions are de-allocated after job

termination to free the storage area for other use.  (See,

e.g., Column 1, lines 39-49.)

However, Salm is not directed to a storage system per se,

and does not disclose the logical partitioning of a plurality

of interfaces, a plurality of disk drives, and a control unit

to permit operation as a plurality of virtual storages

independently.

More particularly, Salm does not teach or suggest the

above-described first feature of the present invention as

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recited in independent claim 1, the above-described second

feature of the present invention as recited in independent

claim 16, or the above-described third feature of the present

invention as recited in independent claim 18, in combination

with the other limitations recited in each of the independent

claims.

**Sanada, US 6,484,245, and Sanada, et al., US 6,742,090**

(Sanada '245 and Sanada '090, respectively) disclose a system

that includes a storage controller 40 constituted from a fiber

channel control unit 41 which may be a protocol processor

including a direct memory access (DMA) for controlling data

transmission between it and the host computers 10, 20, 30, a

microprocessor 42 for controlling all possible operations of

the storage controller, a control memory 43 for storing

therein micro-programs for control of the operation of the

controller along with control data associated therewith, a

cache control unit 44 for controlling writing and reading data

to and from the cache, a disk cache 45 for temporarily

buffering write data and read data to/from a disk drive(s), a

device interface control unit 46 which may be a protocol

processor including DMA for controlling data transfer between

it and its associative disk drives, and a panel 47 for use in

inputting device configuration information to the storage

controller, and a disk array subsystem 50 operable under
control of the storage controller 40.   (See, e.g., Column 4,
line 58 – Column 5, line 24 of the '245 patent.)

However, Sanada '245 and Sanada '090 both fail to teach
the functionality of the present invention, including the
logical partitioning of a plurality of interfaces, a plurality
of disk drives, and a control unit to permit operation as a
plurality of virtual storages independently.

More particularly, neither Sanada '245 nor Sanada '090
teaches or suggests the above-described first feature of the
present invention as recited in independent claim 1, the
above-described second feature of the present invention as
recited in independent claim 16, or the above-described third
feature of the present invention as recited in independent
claim 18, in combination with the other limitations recited in
each of the independent claims.

**Padovano, US 6,606,690** (Padovano) discloses a system in
which a first SAN (Storage Area Network) server is configured
to be coupled to a plurality of storage devices in a SAN via a
first data communication network.  The first SAN server
allocates a first portion of the plurality of storage devices
in the SAN to be accessible to at least one first host coupled
to a second data communication network.  The first SAN server

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allocates a second portion of the plurality of storage devices in the SAN to a first NAS server. The first NAS server configures access to the second portion of the plurality of storage devices to at least one second host coupled to a separate data communication network. (See, e.g., Column 2, lines 40-62.)

However, while Padovano is directed to servers that control configuration of storage, the present invention requires a storage that includes the logical partitioning of a plurality of interfaces, a plurality of disk drives, and a control unit to permit operation as a plurality of virtual storages independently.

More particularly, Padovano does not teach or suggest the above-described first feature of the present invention as recited in independent claim 1, the above-described second feature of the present invention as recited in independent claim 16, or the above-described third feature of the present invention as recited in independent claim 18, in combination with the other limitations recited in each of the independent claims.

**Nolan, et al., US 6,640,278** (Nolan) discloses a system for managing storage resources in a storage network according to storage domains. The system includes a plurality of

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communication interfaces, adapted for connection via

communication media to clients and storage systems and the

storage network.  A processing unit is coupled with the

plurality of communication interfaces and includes logic to

configure a set of storage locations from the one or more

storage systems in the network as a storage domain for a set

of at least one client from the one or more clients in the

storage network.  (See, e.g., Column 2, lines 19-41.)

However, Nolan is not concerned with the same problem as

the present invention, and Nolan fails to teach the logical

partitioning of a plurality of elements to permit operation as

a plurality of virtual storages independently.

More particularly, Nolan does not teach or suggest the

above-described first feature of the present invention as

recited in independent claim 1, the above-described second

feature of the present invention as recited in independent

claim 16, or the above-described third feature of the present

invention as recited in independent claim 18, in combination

with the other limitations recited in each of the independent

claims.

**Goodman, US 6,725,352** (Goodman) discloses a method to

partition a data storage and retrieval system into one or more

logical libraries, where that data storage and retrieval

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system includes a library controller, at least one data

storage drive and at least one control port. Using Goodman's

method, a data storage and retrieval system can be partitioned

into smaller virtual libraries called logical libraries. A

logical library comprises a subset of the complete physical

data storage and retrieval system, where that logical library

includes at least one data storage drive and at least one

control port.  (See, e.g., Column 2, lines 15-49.)

However, Goodman does not teach the present invention,

including the logical partitioning of a plurality of

interfaces, a plurality of disk drives, and a control unit, to

permit operation as a plurality of virtual storages

independently.

More particularly, Goodman does not teach or suggest the

above-described first feature of the present invention as

recited in independent claim 1, the above-described second

feature of the present invention as recited in independent

claim 16, or the above-described third feature of the present

invention as recited in independent claim 18, in combination

with the other limitations recited in each of the independent

claims.

**Hoese, et al., US 6,738,854 and US 6,763,419** (Hoese '854

and Hoese '419, respectively) disclose a system in which

collective storage is provided by storage devices 60, 62, and 64 which can have blocks allocated by programming means within a storage router 56. Virtual local storage is accomplished without limiting the performance of workstations 58 because the storage access involves native low level, block protocols and does not involve the overhead of high level protocols and file systems required by network servers. Additionally, a supervisor unit 86 comprises a microprocessor for controlling operation of storage router 56 and to handle mapping and security access for requests between a Fibre Channel 52 and a SCSI bus 54. (See, e.g., Column 4, lines 7-59 of the '854 patent.)

However, neither Hoese '854 nor Hoese '419 teaches the logical partitioning of a plurality of interfaces, a plurality of disk drives, and a control unit, to permit operation as a plurality of virtual storages independently.

More particularly, neither Hoese '854 nor Hoese '419 teaches or suggests the above-described first feature of the present invention as recited in independent claim 1, the above-described second feature of the present invention as recited in independent claim 16, or the above-described third feature of the present invention as recited in independent

claim 18, in combination with the other limitations recited in each of the independent claims.

**Conway, et al., US 6,754,776** (Conway) discloses a system and method of logically partitioning a cache memory between computer domains using an extended memory address is disclosed. The extended memory address includes an address space identifier for extending a conventional memory address with at least one bit uniquely identifying the address space of a domain from which a data request is made to the cache memory. (See, e.g., Column 2, lines 28-34.)

However, Conway does not disclose the claimed invention, including the logical partitioning of a plurality of interfaces, a plurality of disk drives, and a control unit, to permit operation as a plurality of virtual storages independently.

More particularly, Conway does not teach or suggest the above-described first feature of the present invention as recited in independent claim 1, the above-described second feature of the present invention as recited in independent claim 16, or the above-described third feature of the present invention as recited in independent claim 18, in combination with the other limitations recited in each of the independent claims.

**Fontijn, US Patent Application Publication No.**
2002/0007366 (Fontijn) discloses a method of implicitly
partitioning the storage space available on a storage medium,
into a storage medium for storing user data, and a recording
device for storing user data on a storage medium.

However, Fontijn does not teach the present invention,
including the logical partitioning of a plurality of
interfaces, a plurality of disk drives, and a control unit, to
permit operation as a plurality of virtual storages
independently.

More particularly, Fontijn does not teach or suggest the
above-described first feature of the present invention as
recited in independent claim 1, the above-described second
feature of the present invention as recited in independent
claim 16, or the above-described third feature of the present
invention as recited in independent claim 18, in combination
with the other limitations recited in each of the independent
claims.

**Monday, US Patent Application Publication No.**
2002/0133539 (Monday) discloses a system and method for
attaching a remote storage device to a network.  The remote
storage device is detected and automatically incorporated into
a new or existing logical storage volume.  A size of a logical

storage space provided by a file system is automatically expanded to include the additional storage capacity. The storage capacity is incorporated according to one or more pre-defined policies set by a system administrator or other user. To incorporate the storage capacity, a network-based connection is formed with the remote storage device such that a logical volume manger can configure the storage device as if it were locally attached. For example, a physical volume is created for the remote storage device and the physical volume is added to a volume group based on the pre-defined policies. (See, e.g., paragraphs [0008]-[0009].)

However, while Monday teaches the automatic reconfiguration of logical storage upon the addition of a new storage device, Monday does not teach the logical partitioning of a plurality of interfaces, a plurality of disk drives, and a control unit, to permit operation as a plurality of virtual storages independently.

More particularly, Monday does not teach or suggest the above-described first feature of the present invention as recited in independent claim 1, the above-described second feature of the present invention as recited in independent claim 16, or the above-described third feature of the present invention as recited in independent claim 18, in combination

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with the other limitations recited in each of the independent claims.

**Flamma, et al., US Patent Application Publication No. 2003/0065898** (Flamma) discloses a system for managing the storage of objects in a storage system having a plurality of different storage media divided into different partitions. The system includes a storage processor for determining whether a particular storage partition has reached a predetermined capacity threshold, and a data migration processor for identifying within the particular storage partition an object to be moved and for identifying a target destination partition for the particular object in response to the capacity determination. The data migration processor identifies the target destination partition based on one or more of (a) media type of the particular storage partition, and (b) information identifying related objects in the target destination partition. The system also includes a transfer processor for transferring data representing the particular object to the target destination partition. (See, e.g., paragraph [0011].)

However, while Flamma provides a system for migration of data within storage partitions, Flamma does not teach the logical partitioning of a plurality of interfaces, a plurality

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of disk drives, and a control unit, to permit operation as a
plurality of virtual storages independently.

More particularly, Flamma does not teach or suggest the
above-described first feature of the present invention as
recited in independent claim 1, the above-described second
feature of the present invention as recited in independent
claim 16, or the above-described third feature of the present
invention as recited in independent claim 18, in combination
with the other limitations recited in each of the independent
claims.

**Husain, et al., US Patent Application Publication No.
2003/0120751** (Husain) discloses a system and method for
managing data storage for a plurality of computer systems.
The computer systems may be configured to access virtual
network attached storage.

However, Husain fails to teach the present invention,
including the logical partitioning of a plurality of
interfaces, a plurality of disk drives, and a control unit, to
permit operation as a plurality of virtual storages
independently.

More particularly, Husain does not teach or suggest the
above-described first feature of the present invention as
recited in independent claim 1, the above-described second

feature of the present invention as recited in independent claim 16, or the above-described third feature of the present invention as recited in independent claim 18, in combination with the other limitations recited in each of the independent claims.

**Weber, et al., US Patent Application Publication No. 2004/0111580** (Weber) discloses systems and methods for managing requests of a host system to physical storage partitions. A storage system includes a plurality of storage elements with each storage element configured for providing data storage. A communications switch is communicatively connected to the storage elements for transferring requests to the physical storage partitions. A host system includes a storage router for mapping a portion of the physical storage partitions to logical storage partitions such that the host system can directly access the portion via the requests. Each of the storage elements includes a storage controller configured for processing the requests of the host system. The storage elements also include any of a disk storage device, tape storage device, CD storage device, and a computer memory storage device. (See, e.g., paragraphs [0010] and [0012].)

However, Weber does not teach the logical partitioning of a plurality of interfaces, a plurality of disk drives, and a control unit, to permit operation as a plurality of virtual storages independently.

More particularly, Weber does not teach or suggest the above-described first feature of the present invention as recited in independent claim 1, the above-described second feature of the present invention as recited in independent claim 16, or the above-described third feature of the present invention as recited in independent claim 18, in combination with the other limitations recited in each of the independent claims.

**Kawamoto, US Patent Application Publication No. 2003/0097393 and Kawamoto, JP Patent Application Publication No. 2003-157177** (Kawamoto US '393 and Kawamoto JP '177, respectively) disclose a virtual computer system having a hypervisor (allocating means) that divides a physical computer into a plurality of logical partitions (LPARs), that runs an operating system (OS) in each LPAR, and that controls allocation of resources of the physical computer to the LPARs. The virtual computer system consists mainly of a user interface, a load measuring means, and an adaptive control means. The user interface enables entry of one setting or a

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plurality of settings concerning the control actions of the

virtual computer system.  The load measuring means measures

loads to be accomplished by the OSs in the LPARs.  The

adaptive control means (allocation ratio varying means)

determines the allocation ratios of the computer resources

relative to the LPARs according to the settings entered

through the user interface and the loads to be accomplished by

the OSs in the LPARs which are measured by the load measuring

means.  If the determined allocation ratios are different from

the previous ones, the adaptive control means instructs the

hypervisor to vary the allocation ratios.  Furthermore, the

hypervisor includes a means for dynamically varying the

allocation ratios of the computer resources relative to the

LPARs in response to the instruction issued from the adaptive

control means.  (See, e.g., paragraph [0013].)

However, while Kawamoto US '393 and Kawamoto JP '177 both

teach a virtual computer system capable of dynamically and

optimally allocating computer resources to LPARs according to

the loads to be accomplished by OSs that run in the LPARs and

a knowledge of workloads running on the OSs, neither Kawamoto

US '393 nor Kawamoto JP '177 teaches the present invention

including the logical partitioning of a plurality of

interfaces, a plurality of disk drives, and a control unit, to

permit operation as a plurality of virtual storages

independently.

More particularly, neither Kawamoto US '393 nor Kawamoto

JP '177 teaches or suggests the above-described first feature

of the present invention as recited in independent claim 1,

the above-described second feature of the present invention as

recited in independent claim 16, or the above-described third

feature of the present invention as recited in independent

claim 18, in combination with the other limitations recited in

each of the independent claims.


**(F)   Conclusion**

The pre-examination search required by the MPEP "must be

directed to the invention as claimed in the application for

which special status is requested." MPEP §708.02 (VIII). The

search performed in support of this Petition is believed to be

reasonable; however, the Applicants make no representation

that the search covered <u>every</u> search area that may contain

relevant prior art.  Prior art of greater relevance to the

claims may exist.  The Applicants urge the United States

Patent and Trademark Office to conduct a complete search of

the prior art, and to thoroughly examine this application in

view of the prior art cited above and any other prior art that may be located in its independent search.

Further, while the Applicants have identified, in good faith, certain portions of each cited reference in order to satisfy the requirement for a "detailed discussion of the references, which discussion points out, with the particularly required by 37 C.F.R. §1.111(b) and (c), how the claimed subject matter is patentable over the references" (MPEP §708.02(VIII)), the United States Patent and Trademark Office should not limit review of these documents to the identified portions, but rather is urged to review and consider the entirety of each reference.

In view of the foregoing, Applicants requests that this Petition to Make Special be granted and that the application undergo the accelerated examination procedure set forth in · MPEP 708.02 VIII.

## (G)   Fee (37 C.F.R. 1.17(h))

A Credit Card Payment Form in the amount of $130.00 was submitted with the Petition filed February 17, 2005, in satisfaction of the fee set forth in 37 CFR §1.17(h).  It is believed that this Resubmitted Petition does not require an additional fee.  However, the Commissioner is hereby

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authorized to charge any additional payment due, or to credit

any overpayment, to Deposit Account No. 50-1417.

                                        Respectfully submitted,
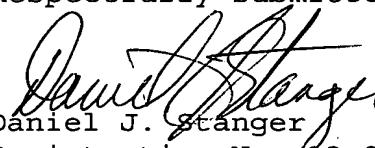
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